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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/797,131

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Shingo Itoh

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OLIFF & BERRIDGE, PLC

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EXAMINER

MARTIN, LAURA E

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/797,131	<b>Applicant(s)</b> ITOH, SHINGO	
	<b>Examiner</b> LAURA E. MARTIN	<b>Art Unit</b> 2853	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 6,8-10,16,18,20,25,26,31,35 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,11-14,22-24,27-30,32,33 and 36 is/are rejected.
- 7) ☒ Claim(s) 15,17,19,21,34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/05/07</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, 7, 27, 30, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) in view of Takahashi et al. (US 2002/0196300 A1).

#### **Kobayashi discloses the following claim limitations:**

As per claims 1, 24, 27, 30, 32, and 36: a printhead that moves relatively to the record medium and ejects ink onto a face of the record medium [0001]; a comparison unit configured to compare the number of ejected droplets (duty) counted by the counting unit with a predetermined value [0021] - [0023]; and a determination unit configured to determine whether double-sided record of the record medium is enabled based on a comparison result of the comparison unit [0023]. Kobayashi also teaches comparing print duty, which must somehow be counted, but does not teach the actual act of counting).

As per claim 2: to record on a plurality of record media, the determination unit determines whether double-sided record of the record medium is enabled for each record medium [0008].

As per claim 5: the printhead forms an image on the first side of the record medium and then forms an image on the second side of the back of the first side of the record medium, thereby forming images on both sides of the record medium [0031]

**Kobayashi does not disclose the following claim limitations:**

As per claims 1, 27, and 32: a counting unit configured to count the number of ejected ink droplets to a predetermined area from the printhead.

As per claim 5: when the printhead forms an image on the first side of the record medium, the counting unit counts the number of ejected ink droplets to the predetermined area on the first side of the record medium through the printhead.

As per claim 7: an area specification unit configured to specify the predetermined area; wherein the counting unit counts the number of ejected droplets to the predetermined area specified through the area specification unit.

As per claims 24, 30 and 36: a counting unit configured to count the number of ejected ink droplets to a predetermined area from the printhead; and a calculating unit configured to calculate the total number of ink droplets based on the counted results of the counting unit, while waiting the counted results respectively.

**Takahashi et al. disclose the following claim limitations:**

As per claims 1, 27, and 32: a counting unit configured to count the number of ejected ink droplets to a predetermined area from the printhead [0141].

As per claim 5: when the printhead forms an image on the first side of the record medium, the counting unit counts the number of ejected ink droplets to the

predetermined area on the first side of the record medium through the printhead [0139]-[0141].

As per claim 7: an area specification unit configured to specify the predetermined area; wherein the counting unit counts the number of ejected droplets to the predetermined area specified through the area specification unit [0116] and [0177]-[0179].

As per claims 24, 30 and 36: a counting unit configured to count the number of ejected ink droplets to a predetermined area from the printhead; and a calculating unit configured to calculate the total number of ink droplets based on the counted results of the counting unit, while waiting the counted results respectively [0140]-[0141].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatuses and methods taught by Kobayashi with the disclosure of Takayashi et al. in order to prevent printed images from being rubbed or smeared.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Kamei et al. (US 6578944 B1).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claim 3: the counting unit is configured to count the number of ejected droplets to the predetermined area on each of both sides of the record medium.

**Kamei et al. disclose the following claim limitations:**

As per claim 3: the counting unit is configured to count the number of ejected droplets to the predetermined area on each of both sides of the record medium (figure 46 – set dot number on both sides, must count to make sure it stays below amount).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Kamei et al. in order to reduce blurring.

Claims 4, 12, 28, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Katayama (JP 2000-141627 A).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claims 4, 28, and 33: when the number of ejected ink droplets exceeds the predetermined value as the comparison result of the comparison unit, the determination unit determines that double-sided record is disabled.

As per claim 12: the determination unit determines that double-sided record on the record medium is disabled when an area exceeding a predetermined record density

representing the number of ejected ink droplets per predetermined unit area on the record medium exceeds a given value.

**Katayama discloses the following claim limitations:**

As per claims 4, 28, and 33: when the number of ejected ink droplets exceeds the predetermined value as the comparison result of the comparison unit, the determination unit determines that double-sided record is disabled [0018] – [0020].

As per claim 12: the determination unit determines that double-sided record on the record medium is disabled when an area exceeding a predetermined record density representing the number of ejected ink droplets per predetermined unit area on the record medium exceeds a given value [0018] – [0020].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Katayama et al. in order to provide a higher quality image.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Anderson et al. (US 2002/0145640 A1).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claim 11: the area specification unit specifies as the predetermined area in which the printhead moves a predetermined distance in a predetermined direction relative to the record medium.

**Anderson et al. disclose the following claim limitations:**

As per claim 11: the area specification unit specifies as the predetermined area in which the printhead moves a predetermined distance in a predetermined direction relative to the record medium [0002].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Anderson et al. in order to reduce skew in the printed output.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Kamei et al. (US 6578944 B1) and Katayama (JP 2000-141627 A).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claim 13: a second-side counting unit configured to count the number of ejected ink droplets to a second side of the record medium before print on the second side of the record medium; and a cancel unit configured to cancel execution of record on both sides of the record medium based on the number of ejected ink droplets

counted by the second-side counting unit when the determination unit determines that double-sided record on the record medium is enabled.

**Kamei et al. disclose the following claim limitations:**

As per claim 13: a second-side counting unit configured to count the number of ejected ink droplets to a second side of the record medium before print on the second side of the record medium (column 4, line 60 – column 5, line 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Kamei et al. in order to reduce blurring.

**Katayama discloses the following claim limitations:**

As per claim 13: a cancel unit configured to cancel execution of record on both sides of the record medium based on the number of ejected ink droplets counted by the counting unit when the determination unit determines that double-sided record on the record medium is enabled [0039].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Katayama et al. in order to provide a higher quality image.

Claims 14 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Ikeda (US 5742301 A).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claims 14 and 29: a reversal unit that reverses the record medium to record on both sides of the record medium from a given direction; wherein, when the determination unit determines double-sided record of the record medium to be disabled, the reversal unit does not reverse the record medium.

**Ikeda discloses the following claim limitations:**

As per claims 14 and 29: a reversal unit that reverses the record medium to record on both sides of the record medium from a given direction; wherein, when the determination unit determines double-sided record of the record medium to be disabled, the reversal unit does not reverse the record medium (figure 1, element 24 and column 4, line 53 - column 5, line 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Ikeda in order to reduce the appearance of striking through during double-sided printing.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Jewell (US 6853948 B2).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claim 22: a print delay unit configured to delay a start time until recording on a second side of the record medium after printing on a first die of the record medium.

**Jewell discloses the following claim limitations:**

As per claim 22: a print delay unit configured to delay a start time until recording on a second side of the record medium after printing on a first die of the record medium (column 6, lines 5-51).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi as modified with the disclosure of Jewell in order to improve image quality.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2003341033 A) and Takahashi et al. (US 2002/0196300 A1), and further in view of Pickup (US 2003/0160852 A1).

**Kobayashi as modified disclose the following claim limitations:**

The apparatus taught in claim 1.

**Kobayashi as modified do not disclose the following claim limitations:**

As per claim 23: an air blowing unit that blows air on one side of the record medium; wherein print on the other side of the record medium is performed after print on the one side; and the air blowing unit blows air on the side where print is complete before print on the other side is complete.

**Pickup discloses the following claim limitations:**

As per claim 23: an air blowing unit that blows air on one side of the record medium; wherein print on the other side of the record medium is performed after print on the one side; and the air blowing unit blows air on the side where print is complete before print on the other side is complete [0032].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kobayashi with the disclosure of Pickup in order to provide a high quality double sided print.

### ***Allowable Subject Matter***

Claims 15, 17, 19, 21, and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA E. MARTIN whose telephone number is (571)272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. E. M./  
Examiner, Art Unit 2853

Laura E. Martin

/Manish S. Shah/  
Primary Examiner, Art Unit 2853